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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/108,643	07/01/98	LENSSEN	K PHN-16,435
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EXAMINER

LEWIS, D

ART UNIT

PAPER NUMBER

2673

10

DATE MAILED:

01/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

[Signature]

Office Action Summary

Application No.

09/108,643

Applicant(s)

Lenssen et al.

Examiner

David L Lewis

Group Art Unit

2778



☒ Responsive to communication(s) filed on Oct 5, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1, 3-6, and 8-15 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 3-6, and 8-15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 9

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Title: Input Device

DETAILED ACTION

Specification

1. Claims 6, 8-10, 14, and 15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **New Subject Matter. Said second calculating means of the amended Claim 6 is not found in the specification.** Figure 3 item 306 represents a single calculating means, said second calculating means is missing.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
3. **Claims 1-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Rallison et al. (5991085).**

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4. **As in claim 1, Rallison et al.** teaches of a method for controlling a graphical element on a display through manipulation of an input device, **figure 1**, the method comprising: measuring a plurality of components of a magnetic field related to an orientation of the input device, said plurality of components not being dependant to each other; and controlling the graphical element on the basis of the plurality of components, **column 19 lines 13-20, column 20 lines 37-52**, characterized in that the controlling, **figure 27 item 522**, step includes the sub-steps, calculating a first signal on the basis of at least two of the plurality of components, the first signal representing a translation movement of the graphical element in a first direction on the display, **column 27 lines 17-58**; and calculating a second signal Y on the basis of at least two of the plurality of components, at least on of the at least two of the plurality of components being different from the at least two components used for calculating the first signal, the second signal representing a translation movement of the graphical element in a second direction on the display, **column 5 lines 10-19, column 20 lines 32-45, column 21 lines 1-17. Wherein Rallison et al teaches of a 3 axis magnetic sensing system**, wherein three pairs of orthogonally mounted magneto resistive sensors provide yaw detection. Each pair of sensors are located on independent X, Y, and Z axis. The first signal of the yaw detection is comprised of the sensor pair for the X direction, and a second signal of the yaw detection is comprised of the sensor pair for the Y direction.

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5. **As in claim 6, Rallison et al.** teaches of an input device for controlling a graphical element on a display, **figure 1**, the input device comprising: a plurality of sensors for measuring respective components of a magnetic field related to an orientation of the input device and a controller for controlling the graphical element on the basis of the plurality of components, **column 19 lines 13-20, column 20 lines 37-52**, characterized in that the controller, **figure 27 item 522**, includes calculation means for calculating a first signal on the basis of data from a least two of the plurality of sensors, the first signal representing a translation movement of the graphical element in a first direction on the display, **column 27 lines 17-58**, and second calculation means for calculating a second signal Y on the basis of data from at least two of the plurality of sensors, at least one of the at least two of the plurality of sensors being different from the at least two sensors used in calculating the first signal, the second signal representing a translation movement of the graphical element in a second direction on the display, **column 5 lines 10-19, column 20 lines 32-45, column 21 lines 1-17**, wherein in the broadest interpretation of the claims said first and second calculation means are represented by microprocessor 522 and PROM 524.
6. **As in claim 3, Rallison et al.** teaches of wherein the controlling step includes an initialization step for measuring reference values of the plurality of components with respect to an orientation of the input device at an instant of executing the initialization step, **column 25 lines 18-20**, and wherein the calculating step calculates the first signal on the basis of a difference between current values and the

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reference values of respective ones of the at least two of the plurality of components, **column 25 lines 18-57**. **As in claim 4**, Rallison et al. teaches of wherein in said initialization step the measuring step measures three components of the magnetic field resulting in a measurement of the strength of the magnetic field, and wherein the initialization step is executed if the difference in strength of the magnetic field, between two successive executions of the measuring step, is larger than a predetermined threshold, **column 19 lines 15-20, figure 23, and column 25 lines 17-45**, wherein said drift/error corrections inherently applies to all sensors as mentioned on lines 15-20 of column 19, further, **column 31 lines 50-56**. **As in claim 5**, Rallison et al. teaches wherein the magnetic field is generated by a permanent magnet or an electromagnet, **column 21 lines 1-15**, wherein magneto resistive elements are utilized in conjunction with coiling. **As in claim 8**, Rallison et al. teaches of wherein said input device further comprises reset means for measuring reference data and wherein calculating means calculates the first signal on the basis of a difference between current data and the reference data, **column 24 lines 32-65**. **As in claim 9**, Rallison teaches wherein at least one of the plurality of sensors is an MR (magneto resistive) sensor, **column 21 lines 1-18**. **As in claim 10**, Rallison teaches wherein two of the plurality of sensors comprise an MR sensor, **column 21 lines 1-18**, and wherein a third of the plurality of sensors comprises a Hall sensor, the three sensors being manufactured on a single substrate, wherein the printed circuit board, **column 20 lines 38-51**, of the

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tracker circuit 508, is equivalent to a substrate which can also include a Hall sensor, **column 31 lines 30-35..**

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rallison et al. (5991085).**

9. **As in claims 11-15, Rallison et al. teaches** of the invention as applied to claims 1-10 above. However Rallison et al. does not explicitly recite the shown formulas. However Rallison et al. clearly teaches of Euler angle calculation, column 27 lines 18-21. Euler's angle representing the trigonometric relation of three orthogonal vectors in space. Said formulas as claimed obviously represent Euler angle calculations and therefore would have been obvious to the skilled artisan in view of Rallison et al. teaching of Euler angle calculation.

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Response to Arguments

10. Applicant's arguments filed 10/5/00 have been fully considered but they are not persuasive. Rallison et al teaches of a 3 axis magnetic sensing system, wherein three pairs of orthogonally mounted magneto resistive sensors provide yaw detection. Each pair of sensors are located on independent X, Y, and Z axis. The first signal of the yaw detection is comprised of the sensor pair for the X direction, and a second signal of the yaw detection is comprised of the sensor pair for the Y direction.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 6104379, 5729129, 5833608, 5886257.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

BOX AF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED PROCEDURE")

Or:

(703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Or hand-delivered to:

Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Examiner: David L. Lewis

January 2, 2001